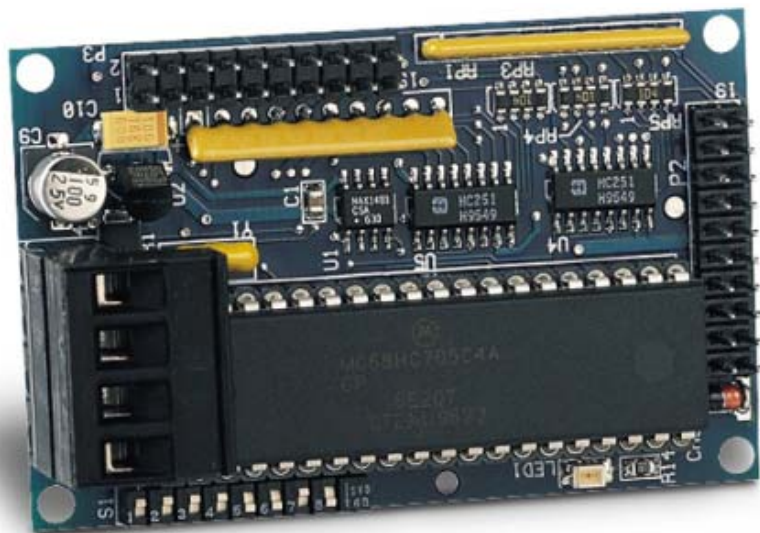




Operation/Reference Guide

AXP-CPI16

16-Channel Custom Panel Interface



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Product Information

The AMX AXP-CPI16 16 Channel Custom Panel Interface Board (FIG. 1) simplifies the process of creating custom control panels for Access systems. Providing contact closure inputs and feedback outputs for up to 16 buttons, the miniature PC board contains a 20-pin header for ribbon cable installation or for direct mounting to a printed circuit board.

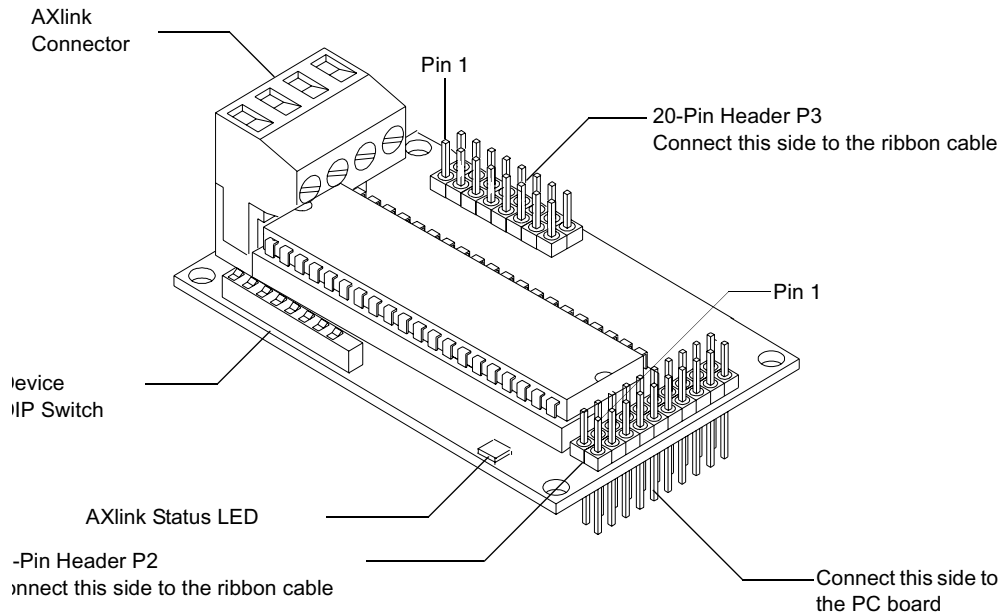


FIG. 1 AXP-CPI16 components

Specifications

The following table lists product specifications for the AXP-CPI16.

AXP-CPI16 Specifications	
Dimensions (HWD)	2.75" x 1.75" x 0.062" (69.90 mm x 44.50 mm x 1.557 mm)
Power	<ul style="list-style-type: none"> • Input voltage: 12 VDC (nominal) • Current draw: 25mA
Inputs	16 closure inputs with a common ground (GND)
Outputs	16 open-collector outputs, acting as switch to ground, up to 100 mA DC each for: <ul style="list-style-type: none"> • Board is not to supply more than 750 mA of +12V total. • Small incandescent lamps • LED indicators - with series resistor (1K for 12 VDC) • Relays - with DC coil
AXlink Connector	A 4-pin (male) connector attached to a four-wire cable which sends control data from the Access CardFrame to the AXP-CPI16.
Headers	Two 20-pin headers included for ribbon cables (up to 100 feet each) or for mounting directly to a PC board.

AXP-CPI16 Specifications (Cont.)	
AXlink Status LED	Indicates AXlink communication status as follows: <ul style="list-style-type: none">• One blink per second communication is functioning.• Two blinks per second devices specified in the master program do not match the specified devices found.• Three blinks per second indicate an AXlink communication error.• Full-on indicates there is no AXlink control or activity (but power is on), or the Axxess program is not loaded.
Device DIP Switch	8-position DIP switch sets AXlink device ID.
Cables	Two 3-foot (91.4 cm) ribbon cables each with a female 20-pin header.

Installation

Mounting Dimensions

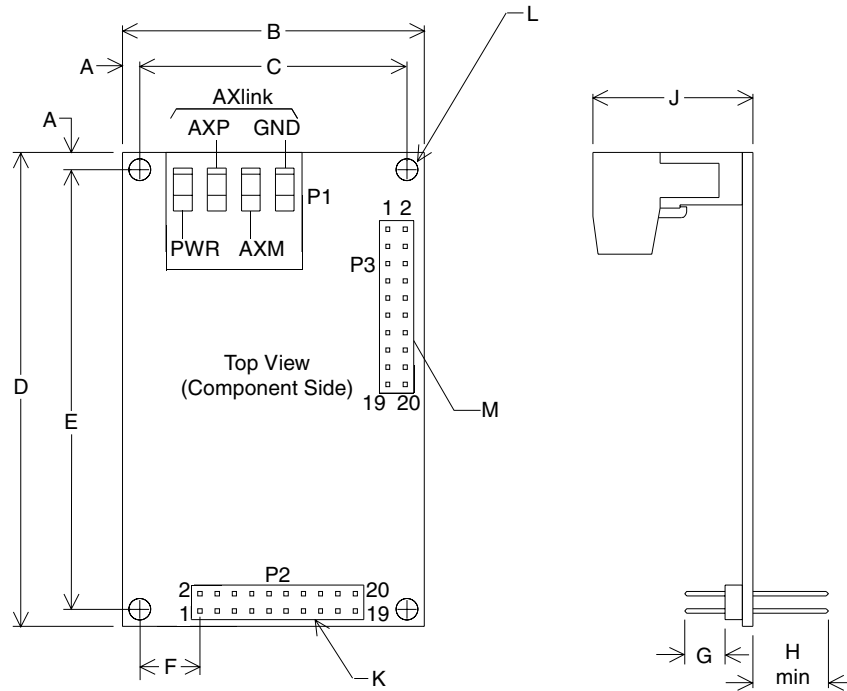


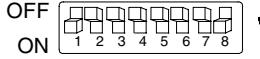
FIG. 1 AXP-CPI16 mounting dimensions

Mounting Dimensions				
Item	Inch	mm	Item	Description
A	0.10	2.50	K	P2 20-Pin Header .025 inch (6 mm) square pins, .1 inch (2.4 mm) typical spacing
B	1.75	44.50	L	0.125 Inch (3.2 mm) mounting holes for #4-40 (3 mm) screws
C	1.55	39.40	M	P3 20-Pin Header .025 inch (6 mm) square pins, .1 inch (2.4 mm) typical spacing
D	2.75	69.90		
E	2.55	64.80		
F	0.35	8.90		
G	0.23	5.80		
H	0.438	11.10		
J	0.93	23.6		

Setting the AXlink Device Number

The 8-position device DIP switch defines the AXP-CPI16 as an AXlink device. It can be one of 255 devices in the Access Control System. Set the device number with the total value of all ON (down) positions. As an example, the device DIP switch shown below defines device number 129 (1+128=129).

Position	1	2	3	4	5	6	7	8
Value	1	2	4	8	16	32	64	128



AMX standard device numbers are assigned as follows:

- Cards are 1 through 25.
 - Boxes are 96 through 127.
 - Panels are 128 through 255.
1. Strip 0.25 inch of wire insulation off all wires.
 2. Insert each wire into the appropriate opening on the connector according to the wiring diagrams and connector types described in this section.
 3. Tighten the screws to secure the wires. Do not tighten the screws excessively; doing so may strip the threads and damage the connector.

Connecting the Two 20-pin Headers

The following chart notes the pinouts of the two 20-pin headers for P2 and P3.

AXP-CPI16 P2/P3 Pinouts							
P2				P3			
Pin	Function	Pin	Function	Pin	Function	Pin	Function
1	Output 1	11	GND	1	Output 9	11	GND
2	Output 2	12	GND	2	Output 10	12	GND
3	Output 3	13	Input 1	3	Output 11	13	Input 9
4	Output 4	14	Input 2	4	Output 12	14	Input 10
5	Output 5	15	Input 3	5	Output 13	15	Input 11
6	Output 6	16	Input 4	6	Output 14	16	Input 12
7	Output 7	17	Input 5	7	Output 15	17	Input 13
8	Output 8	18	Input 6	8	Output 16	18	Input 14
9	GND	19	Input 7	9	GND	19	Input 15
10	PWR	20	Input 8	10	PWR	20	Input 16

Pin 10 provides +12 VDC power from AXlink bus. Add 1K series resistors when using AXP-CPI16 with LED indicators receiving 12 VDC power from Pin 10.

Switch Wiring Diagrams

FIG. 2 diagrams LED and Switch wiring.

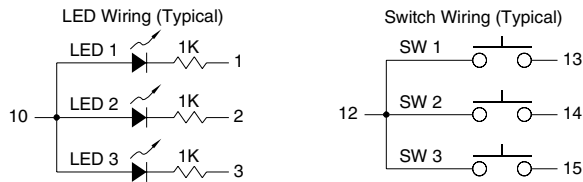


FIG. 2 LED and switch wiring diagrams

Connecting the AXlink Wiring

To install the AXlink data/power bus wiring.

1. Strip 0.25 inch off the wire insulation for all four wires. If the wire is 20 AWG or less, fold the exposed wire over to obtain a positive connection.
2. Insert each wire into the appropriate opening on the connector, as shown in FIG. 3.

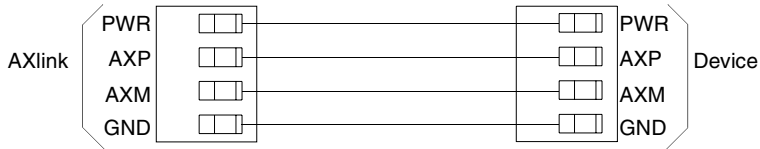


FIG. 3 AXlink wiring diagram

3. Tighten the screws to secure the fit.

Programming

Use the same Access commands as with other AXlink control panels, such as the AXU-MSP series mini-software panels. When using the AXP-CPI16 as a control device, use On, Off, and Pulse commands to control sources connected to outputs and Push and Release commands to receive inputs. For additional information, refer to the *Access Programming Language* instruction manual.

Send Commands	
Command	Description
'STATUS-ON'	Causes the AXP-CPI16 to be in Status-On Mode. This command overrides the mode setting.
'STATUS-OFF'	Causes the AXP-CPI16 to be in Status-Off Mode. This command overrides the mode setting.

The AXP-CPI16 uses input channels to report user input on the contacts or switches attached to the input terminals. Output channels are used to turn on the lamp or LED display devices to indicate the button status to the user.

The AXP-CPI16 default mode is STATUS-OFF, and in this mode the programmer cannot poll the AXP-CPI16 to determine the state of the output channel. This is because in this mode the output and input channels use the same number assignments. Inputs are sent by the AXP-CPI16 only as input changes.

When set for STATUS-ON mode the output channels are assigned a different channel number than the input channels. This allows the programmer to monitor the status of an output channel. However the channel offset must be accommodated in the programming code. Statements such as this example can be used in a program.

```
IF[CPI16,25] (* output channel assigned to input channel 9 on P3 connector *)
```

Each of the two 20-pin connectors is assigned a group of 8 input and output channels. The table below shows the relation of input and output channels in the STATUS modes.

Input/Output STATUS Mode			
Mode	Connector	STATUS-OFF (default)	STATUS-ON
Inputs	P2	Chan 1-8 (Push/Release only)	Chan 1-8 (On/Push/Off/Release)
	P3	Chan 9-16 (On/Off only)	Chan 17-24 (On/Off)
Outputs	P2	Chan 1-8 (Push/Release only)	Chan 9-16 (On/Push/Off/Release)
	P3	Chan 9-16 (On/Off only)	Chan 25-32 (On/Off)

The AXP-CPI16 may be configured to default to STATUS-ON mode using the following method. The commands can force a change to the mode no matter what default mode is configured for the device.

STATUS-ON Mode:

Remove R7 (1K ohm) resistor OR short across R8 for STATUS-ON mode. Firmware remains the same for standard and STATUS-ON mode AXP-CPI16 units.

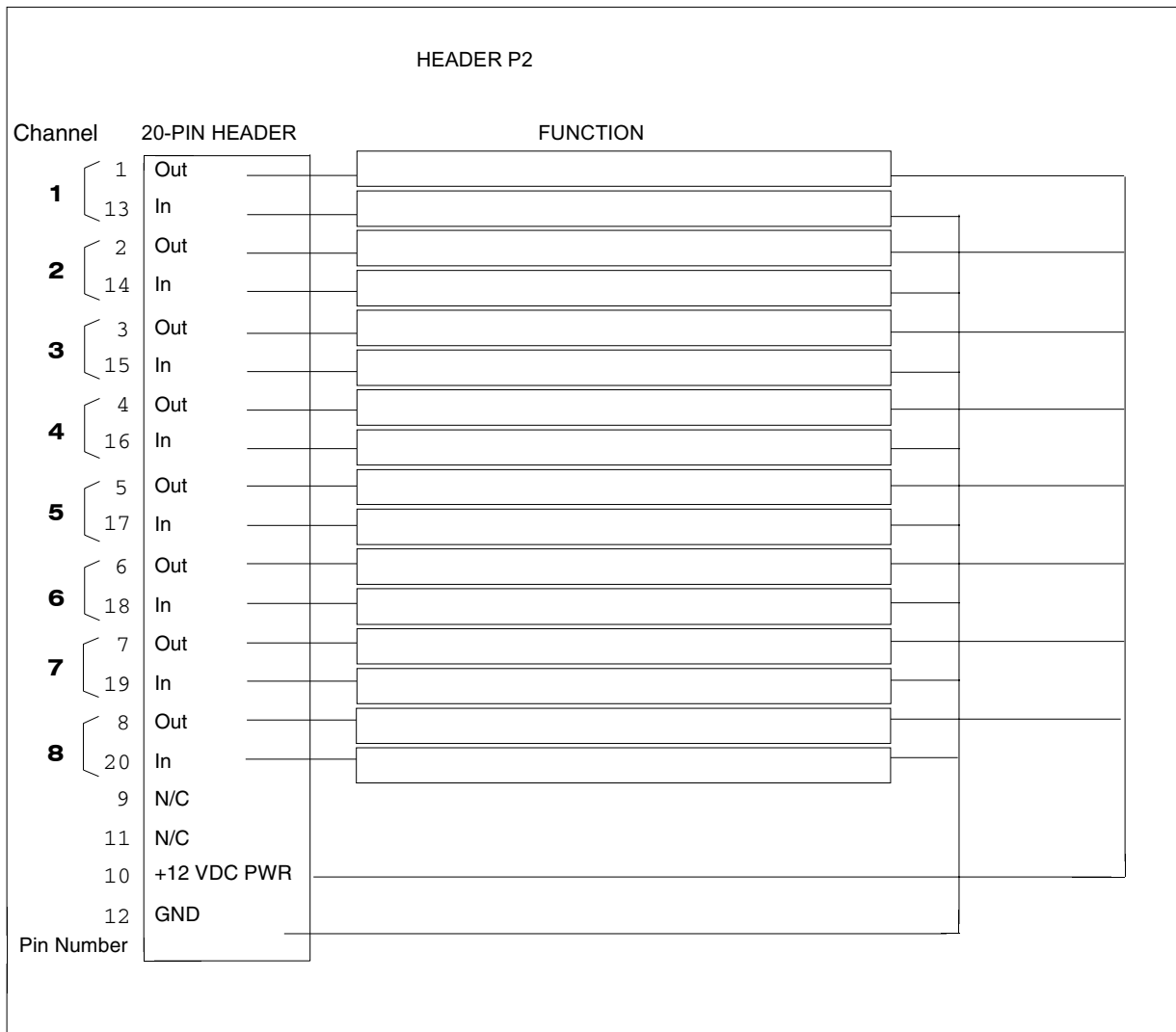
Testing the Unit

If you have programmed the Axxess software, load the program into a PC connected to the control system Master port. See Programming on page 4.

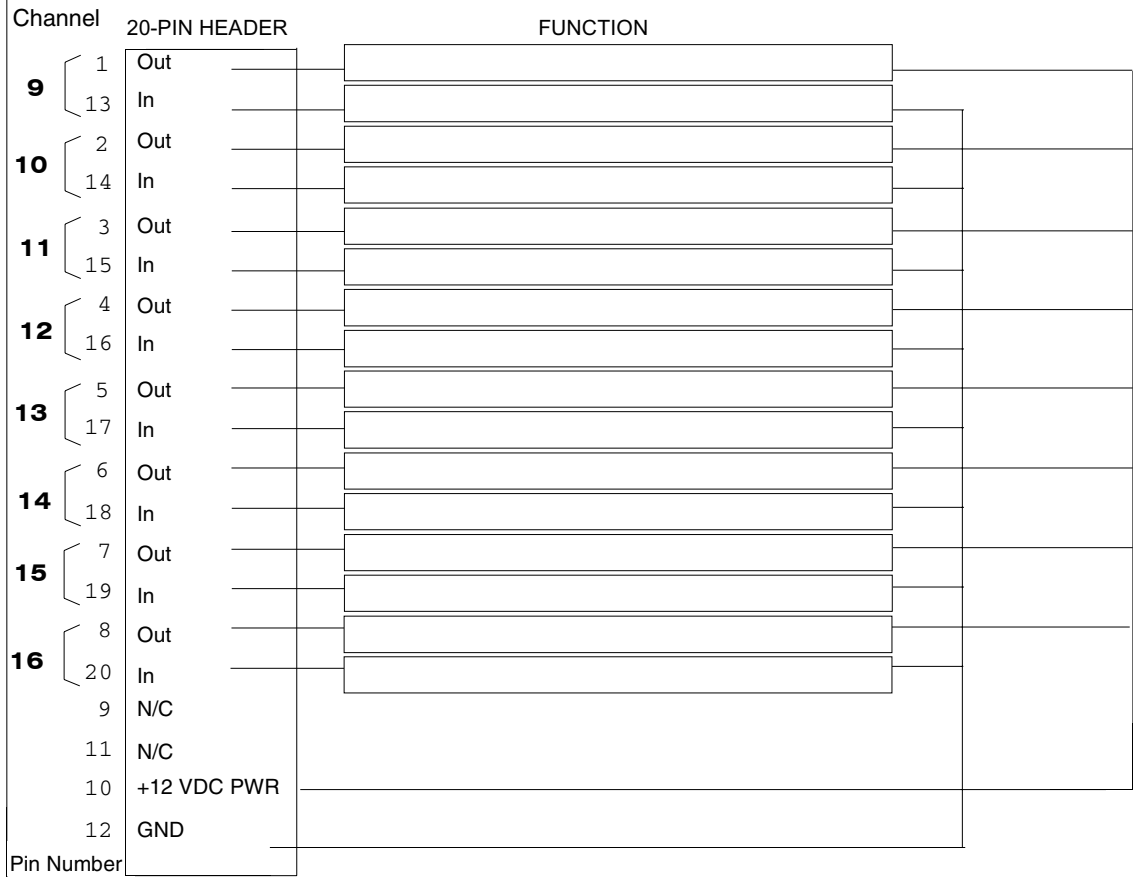
1. Push switches connected to the AXP-CPI16.
2. Look at the lower left of the Axxess screen to verify that the correct device and channel numbers are displayed.
3. Check for the appropriate feedback (as provided by the Master Controller program).

AXP-CPI16 System Worksheet

Dealer ID	Date
Dealer	PO Number
Job	SO Number
Description	Serial Number
Rev Number	Device Number



HEADER P3







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